

EXHIBIT 1

Page 2

1 ANGIE SHELTON, as wife and)
next of kin on behalf of)
2 Mike Shelton, et al,)
)
3 Plaintiffs,)
)
4 v.) No. 3:15-CV-420-TAV-HBG
)
5 JACOBS ENGINEERING GROUP, INC.)
)
6 Defendant.)
7 JOHNNY CHURCH,)
)
8 Plaintiff,)
)
9 v.) No. 3:15-CV-460-TAV-HBG
)
10 JACOBS ENGINEERING GROUP, INC.)
)
11 Defendant.)
12 DONALD R. VANGUILDER, JR.,)
)
13 Plaintiff,)
)
14 v.) No. 3:15-CV-462-TAV-HBG
)
15 JACOBS ENGINEERING GROUP, INC.)
)
16 Defendant.)
17 BILL ROSE,)
)
18 Plaintiff,)
)
19 v.) No. 3:13-CV-17-TAV-HBG
)
20 JACOBS ENGINEERING GROUP, INC.)
)
21 Defendant.)
22
23
24
25



1 PAUL RANDY FARROW,)
)
 2 Plaintiff,)
)
 3 v.) No. 3:16-CV-0000636-
) TAV-HBG
 4)
 JACOBS ENGINEERING GROUP, INC.)
 5)
 Defendant.)

6 JUDY IVENS, as sister and)
 7 next of kin, on behalf of)
 JEAN NANCE, deceased,)
 8)
 Plaintiff,)
 9)
 v.) No. 3:16-CV-00635-
 10) TAV-HBC
)

11 JACOBS ENGINEERING GROUP, INC.)
)
 12 Defendant.)
 13
 14

* * * * *

15 VIDEO DEPOSITION OF ELIZABETH WARD, PH.D.
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August 5, 2021

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17 Videographer: Chris Rusk

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D E P O S I T I O N,

The deposition of ELIZABETH WARD, PH.D., taken at the request of the Defendant, pursuant to the Federal Rules of Civil Procedure, on the 5th day of August, 2021, at the offices of Milberg Coleman Bryson Phillips Grossman, 800 S Gay Street, Suite 1100, Knoxville, Tennessee, before Jeffrey D. Rusk, Registered Professional Reporter and Notary Public at Large for the State of Tennessee.

It is agreed that the deposition may be taken in machine shorthand by Jeffrey D. Rusk, Registered Professional Reporter and Notary Public, and that he may swear the witness and thereafter transcribe his notes to typewriting and present to the witness for signature, and that all formalities touching caption, certificate, filing, transmission, etc., are expressly waived.

It is further agreed that all objections except as to the form of the questions are reserved to on or before the hearing.

(Proceedings began at 9:12 AM)

VIDEOGRAPHER: We are on the record. Today is August 5th, 2021. The time is 9:12 a.m. eastern time. We are here today taking the deposition of Dr. Elizabeth Ward in the case of Greg Adkisson, et al, versus Jacobs Engineering Group, Incorporated in the United States District Court for the Eastern District of Tennessee Knoxville. My name is Chris Rusk, video operator in association with Jeff Rusk Court Reporting & Video.

Will the attorneys please identify themselves and who they represent?

MR. RINGGER: I'm Louis W. Ringger III, here on behalf of the plaintiffs.

MR. MODLIN: Peter Modlin for Jacobs Engineering.

MR. TARWATER: Dwight Tarwater for Jacobs Engineering.

ELIZABETH WARD,
called as a witness on behalf of the Defendant, after
having been first duly sworn, was examined and
testified as follows:



1 Q. So if I understand you correctly,
2 the problem with small particulates, being 2.5, is
3 the size of the particles, right? Not so much what
4 the particles are made of.

5 A. Yes. The medical -- you know the
6 scientific studies of PM2.5 generally demonstrate
7 that particles of that size cause an array of health
8 effects that are not -- you know, that are
9 independent of the exact composition of that
10 material. Now, that doesn't say that material
11 that's enriched in radon -- you know, that doesn't
12 mean that different materials cannot cause different
13 or more severe health effects; it's just the body of
14 literature related to fine particulates is
15 consistently finding certain health effects
16 regardless of the composition of the small
17 particulate matter.

18 Q. And PM2.5 in your view has a lot of
19 potential health effects, right, respiratory
20 effects --

21 A. Cardiovascular.

22 Q. -- cancer --

23 A. Very prominent cardiovascular
24 effects, yes.

25 Q. Cardiovascular effects.

1 Q. And so it's your view that the
2 silica particles in fly ash contributed to all those
3 health effects of the plaintiffs, the respiratory
4 conditions, the cardiovascular conditions, and lung
5 cancer, right?

6 A. That is actually not my view. So
7 the most important or the most -- and the most
8 prominent results of overexposure to silica is
9 silicosis, which is a pneumoconiosis. It's a
10 specific kind of lung disease. We did not see any
11 of those -- we did not -- none of the plaintiffs
12 whose medical histories I have reviewed were
13 determined to have silicosis; they had other kind of
14 respiratory problems, many of which are associated
15 much more strongly with small respirable particle
16 exposure in air pollution than they are with silica.

17 Q. So wait a minute. You've already
18 testified that in your view the fine particulate
19 matter in fly ash, the PM2.5, caused or contributed
20 to a number of the plaintiffs' conditions in this
21 case, right?

22 A. I have testified that I believe
23 exposure to the fly ash at the Kingston coal
24 remediation site contributed to the conditions in
25 this case, yes.

1 their diseases were caused by silica basically,
2 yeah.

3 Q. (BY MR. MODLIN) On Page 31 of your
4 December 10th report, you claim that exposure to
5 silica can cause COPD, correct?

6 A. Right.

7 Q. Are you saying that any of the
8 Kingston workers have COPD because of silica
9 exposure or that silica exposure contributed to any
10 of the plaintiffs' COPD?

11 A. Again, in my broader understanding
12 of the exposures that I've come to have in the
13 process of, you know, preparing my report and my
14 rebuttal, I believe that probably the most important
15 cause of COPD -- most important occupational cause
16 of COPD in this instance is respirable particulates.

17 I think there's a great deal of
18 evidence about, you know, from the air pollution
19 literature, about PM2.5 causing asthma
20 exacerbations, causing COPD exacerbations, causing
21 respiratory irritation. I think that's what we are
22 seeing here in this cohort.

23 Q. And we've already established that
24 some of the respirable particulate in fly ash is
25 silica, right?

1 A. We are not disagreeing that some of
2 the respirable particulate in fly ash is silica.

3 Q. So if the respirable particulate in
4 fly ash caused the plaintiffs' COPD, then silica
5 contributed to that.

6 MR. RINGGER: Object to the form.

7 A. Yeah, I don't think that's -- I
8 mean again, that is not the inference that I am
9 making based on my broad understanding of the
10 exposures -- of the exposures at this site or the
11 silica literature.

12 Certainly silicosis is the
13 predominant health effect associated with silica.
14 COPD is sometimes seen or has been documented in
15 some of the studies, but the classical health
16 effect, the one that you see the most of is
17 silicosis.

18 Q. I'm not asking about silicosis, I'm
19 asking about COPD. And your claim is that the fine
20 particulate in the fly ash contributed to some of
21 the plaintiffs' COPD cases, correct?

22 A. Yes, that is correct.

23 Q. And you've already testified that
24 some of the fine particulate in fly ash is silica,
25 right?

1 A. But the inference I'm making, the
2 causal inference I'm making is based on data from
3 small particulates, regardless of what's in there --
4 regardless of their composition. That's the primary
5 scientific fact that I'm referring to.

6 Q. And my question was we've already
7 established that some of the fine particulate in fly
8 ash is silica, right?

9 A. And I've already responded to that
10 question.

11 Q. The answer was yes, correct?

12 A. Very likely, yes.

13 Q. Why don't we take a break. We have
14 been going over an hour.

15 VIDEOGRAPHER: We are off the
16 record. The time is 11:41 a.m. eastern
17 time.

18 (Off the record at 11:41 AM)

19 (On the record at 11:57 AM)

20 VIDEOGRAPHER: We are now back on
21 the record. The time is 11:57 a.m. eastern
22 time.

23 BY MR. MODLIN:

24 Q. Dr. Ward in your December 10th
25 report, on Pages 28 and 29, you discuss the health

1 Q. So I want to get an understanding
2 from you, what is it about PM2.5 that is harmful to
3 the body?

4 A. Well, the essence of my opinion and
5 also Dr. Rajagopalan's opinion, who is really one of
6 the -- who is, you know, one of the preeminent
7 experts in the world on air pollution and health
8 effects is that it's really the size of the PM2.5
9 and not the composition of PM2.5 that represents the
10 important health hazard related to inhalation of
11 these respirable particles. So these respirable
12 particles are hazardous regardless of their
13 composition.

14 Q. So even if coal ash contained a
15 number of other toxins beyond silica or arsenic or
16 the other things we've identified, would it be fair
17 to say it's harmful to humans irrespective of that
18 chemical composition? Is that what you are saying,
19 Doctor?

20 A. That is exactly what I am saying,
21 that all of the evidence points to the fact that
22 it's the fact that these very small particles can
23 get to the alveolar regions of the lung and get to
24 other regions of the body that is causing the
25 demonstrated health effects that we see in

1 epidemiological studies.

2 Q. Can PM2.5 cause interstitial lung
3 disease?

4 A. I'm not aware that there's any
5 evidence that PM2.5 causes interstitial lung
6 disease.

7 Q. Or what about silicosis?

8 A. PM2.5, none of the PM2.5 studies in
9 the general population have identified silicosis as
10 a health effect -- or a health -- or a condition
11 that's in excess among people exposed to PM2.5.

12 Q. Would PM2.5, without knowledge of
13 its constituents, constituent be considered a
14 fibrogenic dust?

15 A. No, it would not.

16 Q. Does a dust that causes fibrogenic
17 injury differ from the type of injury or the type of
18 dust that can lead to COPD?

19 A. My understanding, and it is
20 reflected my report, is that interstitial lung
21 disease and pneumoconiosis do have distinct
22 etiologies compared to asthma and COPD, that there
23 are only a certain class of compounds that causes
24 these kind of fibrogenic diseases, and there are
25 many other types of exposures that are associated

1 with COPD and asthma, including -- including PM2.5.

2 Q. Is COPD a distinct condition from
3 silicosis?

4 A. I'm not a pulmonologist, but it is
5 my understanding as a generalist that it is a
6 distinct condition from silicosis.

7 Q. Earlier we were talking about the
8 documents that you had reviewed in forming your
9 opinions in the case, and the question was raised as
10 to whether you had reviewed Jacobs Engineering's the
11 first exhibit at the Phase I trial, which was a
12 spreadsheet of sampling data. And I think that you
13 said that you didn't remember if you had reviewed
14 that or not.

15 But do you have any other opinions
16 about that and whether you have actually reviewed
17 and been provided all of the exhibits from the first
18 trial?

19 A. Yes. So during the break
20 Mr. Ringger and I were able to look at the exhibits
21 that he shared with me, and we did identify one of
22 the exhibits is that spreadsheet. In our file, it
23 was not Exhibit No. 1, it was about Exhibit No. 37.
24 So that's one of the reasons why it didn't
25 immediately trigger my memory.